

Threatened, Endangered and Sensitive Species and Terrestrial Wildlife

INTRODUCTION/BACKGROUND

The purpose of this assessment is to summarize information for Threatened, Endangered, and Sensitive species (TES) and terrestrial wildlife species. Currently, the focus on this subject in a forest plan revision context is tied to the viability of species. Wildlife and rare species' presence or absence and abundance on the Forest is largely tied to the configuration and composition of vegetative and non-vegetative (e.g. water, rock or talus, caves, cliffs) components on the Forest, and the geologic dispersal mechanisms (e.g. glaciation, flooding, uplifts, etc.) that placed the components and/or the species there. In addition, the disturbance mechanisms that maintain the ecosystems on the Forest (e.g. fire, windthrow, insects and disease) also determine a species' presence or abundance, in addition to climate factors and other biologic factors such as competition among species for resources.

Species viability has been raised as the primary concern for the past several years as Forest plans have been revised. This is primarily due to the language within the National Forest Management Act (1976) and the 1982 regulations written for its implementation (36 CFR 219.19). These sources state the need for providing habitat to ensure that native and desirable non-native species populations are maintained on the planning unit. The management of TES and management indicator species (MIS) has been the primary focus of viability for the past two decades, as these species have been used as a surrogate to address viability as it is not feasible to track all species that occur. Viability is typically addressed through a two-tiered approach, whereby the ecosystem processes that maintain habitat are provided for, and the most currently rare species are evaluated to determine limiting habitats or population influences. Surveys are used to determine a species' presence on the Forest, and its relative abundance. On the Bighorn, the issues most often raised with regard to viability have included the condition of habitats associated with rare species such as old growth conifer and riparian systems; the effect of habitat fragmentation, road densities, commodity outputs, and recreation uses on habitat; and the population trends of rare species, for which typically few data are available. The element of scale is also an important viability consideration, as some species such as certain rare plants may be confined to one small area of one national forest, whereas several species considered rare occur on many national forests within the Rocky Mountains. The viability requirement for species is currently addressed at the national forest level, as each forest plan must provide habitat to maintain viable populations.

In addition to species viability, the wildlife management program that has been in place on the Forest for many decades is also a component of the forest-wide assessment. The wildlife program has conducted habitat treatments, structural improvements, and surveys for rare species (TES). The level of emphasis within that realm has been primarily budget related, and much of the work accomplished has been through support

to other resource functions (e.g. timber harvest, range analysis, etc.). Habitat treatments have involved prescribed burns, which have used partners such as the Rocky Mountain Elk Foundation to help with costs, aspen regeneration, meadow retention, and other projects aimed at improving or maintaining the habitat diversity on the Forest. Structural improvements have involved riparian exclosures, fisheries habitat improvements, nesting box structures for birds, mammals, and reptiles, and other structures. While the Forest Service is responsible for management of wildlife habitat, the Forest coordinates closely with the Wyoming Game and Fish Department, which has authority and responsibility for wildlife populations.

The primary focus of the 1985 plan was on providing habitat for MIS species, for which elk was chosen as the most significant species. Management prescription 4B was applied to approximately 20% of the Forest to signify an emphasis for MIS in those areas. Management standards and guidelines were developed to ensure that adequate habitat was provided. Elk have consistently been an issue in analysis of most projects implementing the Forest Plan. In addition to elk, 23 other terrestrial wildlife species were used as MIS in the 1985 plan, of which many were not suitable as such, largely due to poor habitat associations or lack of monitoring feasibility. In 2001, the Forest conducted a review of the MIS species, and recommendations resulting from this review were incorporated into a plan amendment that was completed in September of 2002, which also addressed monitoring of some TES species. Additional recommendations made during the 2001 review will be incorporated into the plan revision process with regard to additional MIS species to consider and monitoring for species and habitats. Monitoring or surveys are currently conducted at the project scale, as that is typically when funding becomes available to conduct such efforts, and this will be improved upon through revision and the 2002 MIS amendment.

SPECIES OCCURRENCES, RANKINGS, AND HABITAT ASSOCIATIONS

Species occurrences have changed since European settlement of the Forest and surrounding communities, primarily from early exploitation of wildlife and habitat resources. A summary paper describing these changes was prepared for the revision effort, and is titled “History of Wildlife on the Bighorn”. Since the settlement of the west, cataloging species occurrences and placing species in taxonomic keys has been of significant interest to people. Museums are replete of early collections, primarily related to larger or more evident species, and collections and research today continue with botanical, invertebrate, avian, and mammalian species. Rare species are typically identified as the relative abundance of these species is assessed. Currently, the Natural Heritage databases are the repository of information regarding species’ rarity. Species are catalogued and assigned rankings according to their abundance and perceived threat to habitats. Often, listings under the Endangered Species Act (ESA), viewed as the last effort at retaining a rare species, are based on these rankings and other data associated with species. The Wyoming Natural Diversity Database (WYNDD) located at the University of Wyoming in Laramie is currently the repository for this type of information in Wyoming. The Forest Service contributes funding and

information in the form of species' occurrences to this database, and uses its services and staff expertise to facilitate planning efforts dealing with viability issues. Species locations known by Forest Service personnel are compiled with locations submitted by other people and agencies, and a more complete database results. The Wyoming Game and Fish Wildlife Observation System database is currently in the process of being assimilated into WYNDD's database, which will also provide more complete species occurrences for terrestrial wildlife.

In addition to the rankings assigned by the heritage database, the Forest Service has legal requirements to proactively manage for threatened and endangered species under the ESA, and also assigns the "sensitive" designation to additional species for which viability is of concern, to prevent ESA listing. The Rocky Mountain Region is currently in the process of revising its sensitive species list, and changes to this list will be incorporated in the revised plan as appropriate. As heritage rankings, ESA listings, and sensitive designations are dependent on research knowledge to provide information on species and their habitats, this aspect of viability is a continually evolving field.

The current depictions of rare species and their occurrence or consideration on the Forest have been compiled in a document titled "Species Emphasis Categories", as referred to in the Biological and Habitat Diversity section of the Analysis of the Management Situation (AMS) document. This document also addressed the consideration of MIS, used as a surrogate in viability planning. Other agencies or groups also categorize or rank species according to elements of rarity, and the Forest strived to consider these species as well. In summary, the Forest considered species listed as rare from the U.S. Fish and Wildlife Service, the Wyoming Game and Fish Department, the Wyoming Partners in Flight, the Wyoming Natural Diversity Database, and the Rocky Mountain Region of the Forest Service.

Habitat associations are derived from research based on species occurrences. There are several habitats used by rare species on the Forest, including riparian, old growth conifer, caves, rock outcrops or talus, and others. While some of these habitats have had data collection efforts begun, there are no complete inventories of any of them. Cave resources of the Forest were assessed through an inventory (Uhl 1980), however species presence has not been completely assessed nor regularly monitored. Riparian habitat inventories were begun in the early 1990s as associated with a riparian classification effort (Girard et al 1997), however the Forest has not been completely inventoried, nor have exhaustive species inventories been conducted in riparian areas. Known riparian and watershed conditions were summarized in each geographic area assessment. Old growth surveys have been conducted in the Clear/Crazy geographic area, however only sporadic inventories have been conducted on the remaining portion of the Forest, primarily in support of other vegetation management decisions being considered. A summary of information known on old growth and early successional stage forested vegetation was prepared for the forest-wide assessment titled "Forested Structural Diversity". With regard to habitat fragmentation issues, an additional summary of information was prepared in a white paper format at the forest-wide scale and is titled "Fragmentation".

At the Forest scale or larger, there are several general habitat assessments that have been prepared, including two by the Nature Conservancy, two by the Rocky Mountain Region of the Forest Service, one by the University of Wyoming contracted by the Forest, and a more species specific assessment with habitat ties completed by WYNDD. These documents were also summarized in the “Species Viability Process” white paper that is being prepared for the revised plan. These documents provided a synopsis of vegetative conditions and the range of variability that can be expected in their distribution or structural stages. An aquatic assessment dealt with physical influences on stream courses and impacts to aquatic species.

With regard to specific species habitat models, the only species for which modeling has been attempted is elk. Based on coordination with Wyoming Game and Fish, a model addressing elk security habitat was developed. Elk security was deemed to be the most currently limiting factor for effective elk habitat as it includes both elements of road density and forested vegetation, the elements traditionally evaluated during planning for management activities. Out of the approximate 1.1 million acres of land on the Forest, 267,684 acres were determined to be potential security habitat, while 125,821 acres (47% of potential) were determined to be existing security habitat. The maps and specific figures of this habitat model will be displayed in the revised plan and the accompanying environmental impact statement. Elk security is deemed to be important habitat as it has the clearest connection to hunting opportunities and herd management aspects on the Forest, and is spatially connected to management activities.

Further assessments of species and their habitat are being conducted as part of the viability process for plan revision. For each of the species selected in the Species Emphasis Categories document, a synopsis of current known information on habitat requirements, population trends, and potential management considerations is being prepared. It was also noted that species may change on the emphasis categories over the next planning period due to the continual change in information for these and other species and their habitats. Finally, the Rocky Mountain Region has also embarked on a Species Conservation process, whereby assessments are prepared for species, by species experts, and information for the species are incorporated into the planning process. Although this process may not be completed by the time of the completed revised plan, various species assessments and other information will be utilized as they become available during the revision process.

The largest changes that have occurred on the Forest since its inception have been the addition of roads and trails for access purposes, and the associated permanent facilities such as buildings, utility structures, and recreation facilities. Roads and trails, while socially desirable for many human uses, have caused a loss of habitat from vegetation lost during construction; they can increase watershed impacts through erosion and sedimentation, and also provide disturbance elements to wildlife from recreation or other use of the lands. Their placement, maintenance, and use need to be managed to minimize the impacts mentioned, and only needed or appropriate levels of road densities need retained. Other historic disturbances, such as tie hacking and log

transport in streams, and historic levels of livestock grazing, have largely been halted and management is becoming much more focused on sustainable use of resources. Timber harvest to date has been conducted on less than 10% of the Forest, and has provided some variances in age class structures of forested vegetation, similar to what fires or other natural disturbances may have accomplished. Livestock grazing occurs over most of the Forest, though levels of grazing are continually being assessed to make adjustments to provide sustainable levels of use. Another effect of human occupation of the Forest has been fire suppression, though effects from this are likely only evident in grass, shrub, and low elevation forests where fire frequencies were primarily shorter interval fires. The higher elevation conifer forests have not likely been affected as much by suppression due to their historically long fire intervals. Finally, the change in some vegetation and aquatic communities from introduction of non-native species has occurred, though largely at a small or localized scale in certain areas of the Forest. There are no known widespread problems or large trends of decline associated with these introductions, with the exception of the white pine blister rust that is affecting limber pine in larger extents on the Forest.

While hunting and fishing and wildlife viewing continue as the largest use or value of the resources on the Forest, the levels of these uses are not conducted at exploitative levels, though some impacts from recreation use do occur to vegetation and wildlife resources. Management emphasis through the next planning period will be on providing for maintenance of ecosystem functions to maintain TES and wildlife habitat, while allowing for sustainable uses of those resources as provided for under the NFMA.